

5.9 291

HW

Key

21

$$\sqrt{-100a^4b^2}$$

$$10a^2bi$$

21-41 odd

44, 50, 96

23.

$$\sqrt{-6} \cdot \sqrt{-24}$$

$$i\sqrt{6} \cdot 2i\sqrt{6}$$

$$2i^2 6$$

$$-12$$

25. $3i(-5i)^2$

$$-25$$

$$-75i$$

27.

$$i^{24}$$

$$(i^2)^{12}$$

$$(-1)^{12}$$

$$+1$$

29. i^{63}
 $i(i^2)^{31}$

$$-i$$

31. $(3-5i) + (3+5i)$

$$6$$

33. $(7-4i) - (3+i)$

$$4-5i$$

35. $(1-4i)(2+i)$

$$2 + i - 8i - 4i^2$$

$$6-7i$$

37. $(-3-i)(2-2i)$

$$-6 + 6i - 2i + 2i^2$$

$$-8 + 4i$$

39. $\frac{4}{5+3i} \cdot \frac{5-3i}{5-3i} = \frac{20-12i}{25-9i^2}$

$$\frac{20-12i}{34} = \frac{10-6i}{17}$$

41. $\frac{2-i}{3-4i} \cdot \frac{3+4i}{3+4i}$

$$\frac{6+8i-3i-4i^2}{9-16i^2} = \frac{10+5i}{25}$$

$$9-16i^2$$

$$25$$

$$= \frac{2+i}{5}$$

$$44. \frac{5-i\sqrt{3}}{5+i\sqrt{3}} \cdot \frac{5-i\sqrt{3}}{5-i\sqrt{3}} = \frac{25 - 10i\sqrt{3} + 3i^2}{25 - 3i^2}$$

$$= \frac{22 - 10i\sqrt{3}}{28}$$

$$\boxed{\frac{11 - 5i\sqrt{3}}{14}}$$

$$50. 2x^2 + 12 = 0$$

$$2x^2 = -12$$

$$x^2 = -6$$

$$x = \pm i\sqrt{6}$$

$$56. 8 + 15i = 2m + 3ni$$

$$2m = 8$$

$$m = 4$$

$$15i = 3ni$$

$$15 = 3n$$

$$5 = n$$